

Remarks

Claims 1-10 and 12-15 are pending.

Claims 5 and 8 are withdrawn.

Claim 1, 10, 14 and 15 are amended.

Claims 2 and 9 are original.

Claims 3, 4, 6, 7, 12 and 13 are as previously presented.

Claim 1 is amended for clarity and to focus more distinctly on specific embodiments of the invention by deleting to delete all halogens from the definitions of R1 to R16, R17 to R20, and R22 to R23 and by inserting the word "pigmentary" before "compound of formula" in line 3. Support is found on page 7, lines 12-13, page 9, line 6 and page 10, lines 15-16.

Claim 10 is amended to be dependent on claim 9. Claims 14 and 15 are amended to be dependent on claim 7. Support is inherent in the claims.

No new matter is added.

Rejections

Claims 1-4, 6, 7, 9, 10 and 12-15 are rejected under 35 USC 103(a) over Machiguchi, US Pat Appl, 2002/0045111 which discloses a three color, color filter wherein the green filter contains a phthalocyanine dye and a yellow pyridone azo dye in view of applicant's admission that some of the instant phthalocyanines are known.

Applicants respectfully traverse the rejections.

The Examiner notes in the present Action that no argument was made relative to this rejection in the previous response. It was an oversight by Applicants' agent who apologizes for this omission.

Applicants respectfully point out that Machiguchi teaches the use of a blue dye in the production of a color filter, that is, a color filter comprising a "soluble colorant" which dissolves during its application losing its crystal and particulate structure. With regard to paragraph [0065] suitable dyes include C.I. Solvent Blue 25, C.I. Solvent Blue 55, C.I. Solvent Blue 67, C.I. Acid Blue 249, and C.I. Direct Blue 86. By contrast, the present invention provides color filters prepared using pigmentary colorants or pigments, (cf. page 9, line 6; page 10, lines 15-16; page 18, lines 1-2), by definition insoluble in the medium in which they are used.

Although pigments and dyes may have some structural features in common, pigments attain much of their coloristic properties from their physical structure, not just from their chemical composition. For example, different crystal forms of pigments have different colors, different particle sizes have different color depths and intensities as well as shades of the color and different usable lifetimes. The physical integrity of the pigment particle (crystalline structure) must therefore remain intact. These effects greatly impact the suitability of using a dye or a pigment in a particular process and for this reason, Applicants respectfully suggest that pigments and dyes cannot always be considered as functional equivalents. Machiguchi suggests as much in paragraph 0004 stating that while pigments had been used in color filters, they "are not suitable for fine or minute patterns".

Enclosed is a declaration under rule 132 signed by inventor Gerardus De Keyzer in which the differences between the pigments of the instant invention and the dyes of Machiguchi are discussed along with data illustrating the differences and the superiority of the instant pigments.

In the declaration comparative data is presented to show that the dyes of Machiguchi are inferior to the instant pigments in several significant ways. The dyes partially degrade during the formation of the color filters whereas the instant pigments do not. Also, the sides of the transmission curve near 530 nm of the pigment have much sharper slopes than those of the dye, figure 3, page 5, providing better color saturation, and the instant pigments block more of the unwanted light than do the dyes. Thus, less yellow pigment is needed when the instant green pigment is used vs the dye of Machiguchi resulting in better color transmission at the desired wavelengths for the instant color filters, bottom of page 5 and page 6 of the declaration.

Applicants respectfully submit that the superior results of the instant pigments over Machiguchi are clear in light of the data and that the instant color filters containing the green offer a significant improvement over the art.

Applicants further respectfully point out that at the time the instant invention was made, the state of the art called for the use of phthalocyanine compounds having solubilizing groups in color filters. As disclosed in the instant specification in the paragraph that bridges pages 1 and 2, tetroxy-substituted phthalocyanines are known in the literature for use in color filters, but all of these phthalocyanines are highly soluble due to the presence of solubilizing groups and asymmetric centers.

Significantly, Machiguchi clearly states in paragraph 0004, that while pigments had been used in color filters, they "are not suitable for fine or minute patterns".

Thus, while "the instant compounds of formula (I) are partially known, partially new", the use of the instant compounds in color filters was unknown at the time of the invention. Further, the art at the time of the invention, specifically the cited Machiguchi disclosure taught against the use of insoluble pigments in color filters. Applicants therefore respectfully submit that the superior results shown for the instant pigments are surprising in light of the art.

In light of the above discussion Applicants respectfully submit that the 103(a) rejections over Machiguchi, US Pat Appl, 2002/0045111, in view of applicant's admission are overcome and kindly ask that the rejections be withdrawn.

Claims 1-4, 6, 7, 9, 10 and 12-15 are also rejected under 35 USC 103 over Machiguchi, US 2002/0045111 in view of M.P. Somashekarappa et al. which discloses a blue green phthalocyanine. The Examiner states that it would be obvious to use the phthalocyanine of Somashekarappa in the color filter of Machiguchi.

Applicants respectfully traverse the rejections.

Applicants respectfully note that, outside of claims 9 and 10, which explicitly exclude the compounds of Somashekarappa, the instant claims relate to color filters and compositions used in the preparation thereof and there is no mention in Somashekarappa of color filters nor any suggestion that the compounds could be used in this way.

Applicants again point out that Machiguchi, paragraph 0004, teaches against the use of pigments in the color filters described therein and that at the time of the invention only soluble tetroxy-substituted phthalocyanines were used in color filters, instant specification paragraph bridging pages 1 and 2. Somashekarappa does suggest that the compounds may act as pigments; i.e., page 67, col 1, states that the compounds are highly soluble in concentrated sulfuric acid and DMSO, but less soluble in DMF and DMA. Referring to the instantly submitted declaration, Applicants have found that the instant phthalocyanines are in fact insoluble in the present formulations and that significant and surprising benefits are realized.

Given that Somashekarappa is silent regarding color filters and that Machiguchi teaches against the use of phthalocyanine pigments in color filters, Applicants respectfully aver that it could not be considered obvious to use the pigments of Somashekarappa in the color filters of Machiguchi.

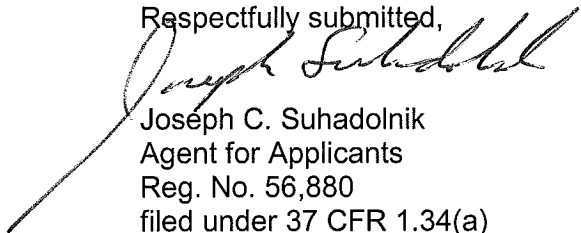
Applicants respectfully submit that the 103(a) rejections over Machiguchi, US Pat Appl, 2002/0045111, in view of M.P. Somashekarappa et al. are overcome and kindly ask that the rejections be withdrawn.

In light of the instant amendments, declaration and discussion, Applicants respectfully submit that all rejections are addressed and are overcome and kindly ask that the rejections be withdrawn and that claims 1-4, 6, 7, 9, 10 and 12-15 be found allowable. Applicants further kindly ask that upon finding claim 1 allowable, the Examiner rejoin claims 5 and 8 as suggested by the Examiner in the Action mailed May 8, 2008, and find those claims also allowable.

In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

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Enclosed: Declaration under rule 132 signed by Gerardus De Keyzer
Request for Continued Examination
Petition of extension of time to respond